

**Revision of the North African spider genus
Dorceus C.L.Koch, 1846
(Araneida: Eresidae)**

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Abstract

The eresid genus *Dorceus* is revised and five species from North and West Africa are recognized and distinguished in a key. All the existing type specimens were examined and all species are redescribed. Scanning electron microscopy was used in the examination of male palps. A distribution map for each species is provided based on verified literature distribution records. The transfer of *Eresus albopictus* to *Dorceus* is rejected. New synonyms are: *D. caniceps* Simon, 1910 = *D. fastuosus* C.L.Koch, 1846; *D. eburneus* (Simon, 1876) = *D. latifrons* Simon, 1873.

Keywords: Eresidae, *Dorceus*, North Africa, Taxonomy, Spiders.

Introduction

Dorceus C.L.Koch, 1846 is the second described genus after *Eresus* Walckenaer, 1805 in the history of family Eresidae C.L.Koch, 1851. The family currently includes 10 genera, 103 species, and 7 subspecies which are distributed throughout the Ethiopian, Mediterranean, Oriental, and Palearctic regions as well as Brazil (Platnick, 2002).

Dorceus was first described by Koch (1846) to accommodate *D. fastuosus*. He described a male from Senegal and provided a beautiful drawing for it. After 27 years, Simon (1873a) described a second species, *D. latifrons*, based on a dry female specimen from Algeria. At the same time, he described two *Eresus* species from Sicily and Algeria under the names *E. albopictus* and *E. lucasi* respectively. The second species was later synonymized by Roewer (1954) with the first one and transferred by Lehtinen (1967) to genus *Dorceus*. Simon described the remaining species of *Dorceus* between 1876-1910. Species recognition was mainly based on

colour patterns, a character found to be variable amongst the eresids (Kullmann *et al.*, 1972). Simon (1910) provided a key to the males of *Dorceus*, separating them into two groups based on the colour pattern on the cephalic part of the cephalothorax. He could not find enough material to study and separate the females too.

Roewer (1954) listed 8 species of *Dorceus*: 6 from the Palaearctic region and 2 from the Ethiopian region. This was confirmed by Platnick (2002) who also listed 8 species from Morocco, Algeria, Tunisia, West Africa, Senegal, and Egypt. Lehtinen (1967) provided two drawings of male palpal organs of *D. eburneus* Simon, 1876 and an undescribed species from Central Africa. The most recent information on *Dorceus* was provided by El-Hennawy (1998), with the redescription of the male of *D. quadripilotus* Simon, 1908 from Egypt. Near the end of the second millennium, some eresid genera were revised: *Stegodyphus* Simon, 1873 by Kraus & Kraus (1988), *Penestomus* Simon, 1902, *Wajane* Lehtinen, 1967 and *Seothyra* Purcell, 1903 by Dippenaar-Schoeman (1989 & 1990). *Dorceus* with its few species deserves revision.

Methods

The type material of the known species were examined. The right palp of a male of each species was photographed and examined by scanning electron microscope (Jeol JSM-5400). The abdominal patterns of males were drawn. Epigyna and vulvae of the three known female specimens were examined and photographed. Measurements of the different species were taken in millimetres for comparison.

The distribution of *Dorceus* species was summarized from the literature. The names and coordinates of geographical localities were verified using the Royal Military College Atlas (Anon, 1928), The Arab Atlas (Anon, 1968), Nordafrika map (Anon, 1983), and National Geographic Society's Atlas of the World (Anon, 1996) and plotted on a map.

Abbreviations used: ALE = anterior lateral eye; AME = anterior median eye; L = length; LOQ = lateral ocular quadrangle; MOQ = median ocular quadrangle; PLE = posterior lateral eye; PME = posterior median eye; TL = total length; W = width.

Material from the following collections were examined: CHE = H.K.El-Hennawy private collection, Cairo, Egypt; MHNG = Muséum d'histoire naturelle, Genève, Switzerland; MNHN = Muséum National d'Histoire Naturelle, Paris, France; OMNH = Oxford University Museum of Natural History; ZMHB = Museum für Naturkunde, Zentralinstitut der Humboldt-Universität zu Berlin, Germany.

There is no collected material of genus *Dorceus* in the following museums, which answered my inquiries: Naturhistorisches Museum Wien (Dr. Jürgen Gruber); The Natural History Museum, London (Dr. Janet Beccaloni); American Museum of Natural History (Dr. Norman I. Platnick). The internet search facilitated but yielded the same result with the following museums: Institut royal des Sciences Naturelles de Belgique; National Museum of Natural History, Smithsonian Institution; Staatliches Museum für Naturkunde Karlsruhe; Zoological Museum, University of Copenhagen.

Systematics

Genus *Dorceus* C.L.Koch, 1846

Dorceus fastuosus C.L.Koch, 1846: 15-16.

Dorceus C.L.Koch, 1850: 70. Simon, 1864: 300; 1892: 254; 1910: 290. Lehtinen, 1967: 231, 389. El-Hennawy, 1998: 97.

Type species: *Dorceus fastuosus* C.L.Koch, 1846. By monotypy.

Diagnosis: *Dorceus* and the closely related *Seothyra* can be distinguished from other eresid genera by their short posterior spinnerets which are half the length of the anterior ones and the cylindrical, widely spaced anterior spinnerets which are strongly conical in other genera. The two genera differ mainly in the shape of the cephalothorax where the cephalic part is nearly as long as wide in *Seothyra*, and reverse trapezoidal in *Dorceus*; the size of the eyes are equal or subequal in *Seothyra*, while the PME are larger than the rest in *Dorceus*; the development of the front legs which are usually thicker than the others, especially in males of *Seothyra* compared to *Dorceus* where almost all the legs are of equal thickness (Simon, 1903; Lehtinen, 1967; Dippenaar-Schoeman, 1990).

Description: Total length (in mm): Male: 5-14, Female: 12-13. Cephalothorax: Cephalic part: wider than long, higher than thoracic part; posterior edge semi-circular in shape, abruptly inclined towards thoracic part. Eyes: PME largest; other eyes subequal or equal in size; PME less than 1.5 times AME (1.18-1.43); AME widely separated in females, and narrower in most males; MOQ wide trapezoidal, narrower anteriorly, sometimes slightly protruding forwards; lateral eye area reverse trapezoidal slightly wider anteriorly; ALE directed laterally and downwards. Clypeus: very narrow, sometimes with a small lip-like protrusion between chelicerae. Thoracic part: almost flat, slightly inclined posterior to cephalic part; fovea vary from small and circular, to wide and deep, situated just behind incline of cephalic part. Chelicerae: with big tooth on inner edge fitting against fang; with strong boss. Male palp: without tibial or patellar apophyses; female palp with toothed claw. Abdomen: oval, overlapping cephalothorax; variable abdominal pattern present only in males. Spinnerets: anterior spinnerets thick, cylindrical, widely spaced; posterior spinnerets flattened, very short, half the length of the anterior ones; median spinnerets smallest, quite vestigial. Cribellum: bipartite. Leg formula IV-I-II-III; Leg I L : Cephalothorax L 2-2.7 in males, 1.4-1.8 in females; leg spination: spines usually ventral on tibiae, metatarsi and tarsi I-IV in males and III, IV in females; tarsi with three claws, two uniserrated and one smooth; in males, legs covered by orange, brown, black and white patches; calamistrum absent from metatarsus IV of males.

Distribution: The distribution of *Dorceus* species is confined to the range: 29°17'E-17°00'W, 14°40'N-35°21'N, from North Africa and Senegal (Fig. 31).

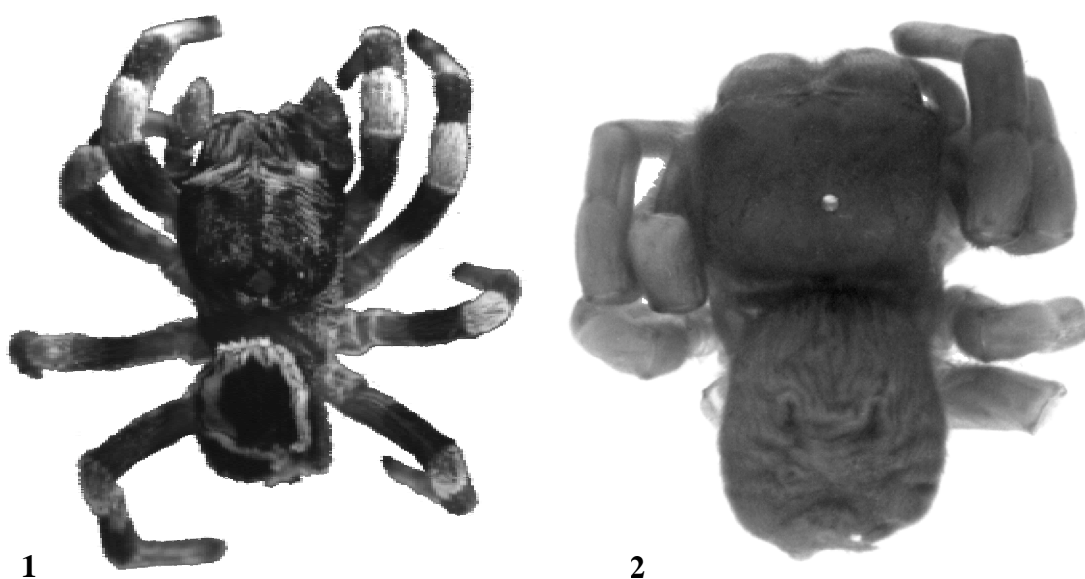
Habitat: The habitat of *Dorceus* ranges from relatively humid regions near sea level on the Mediterranean or Atlantic coast to coastal desert regions, at most 220 km from the coast.

Key to *Dorceus* species

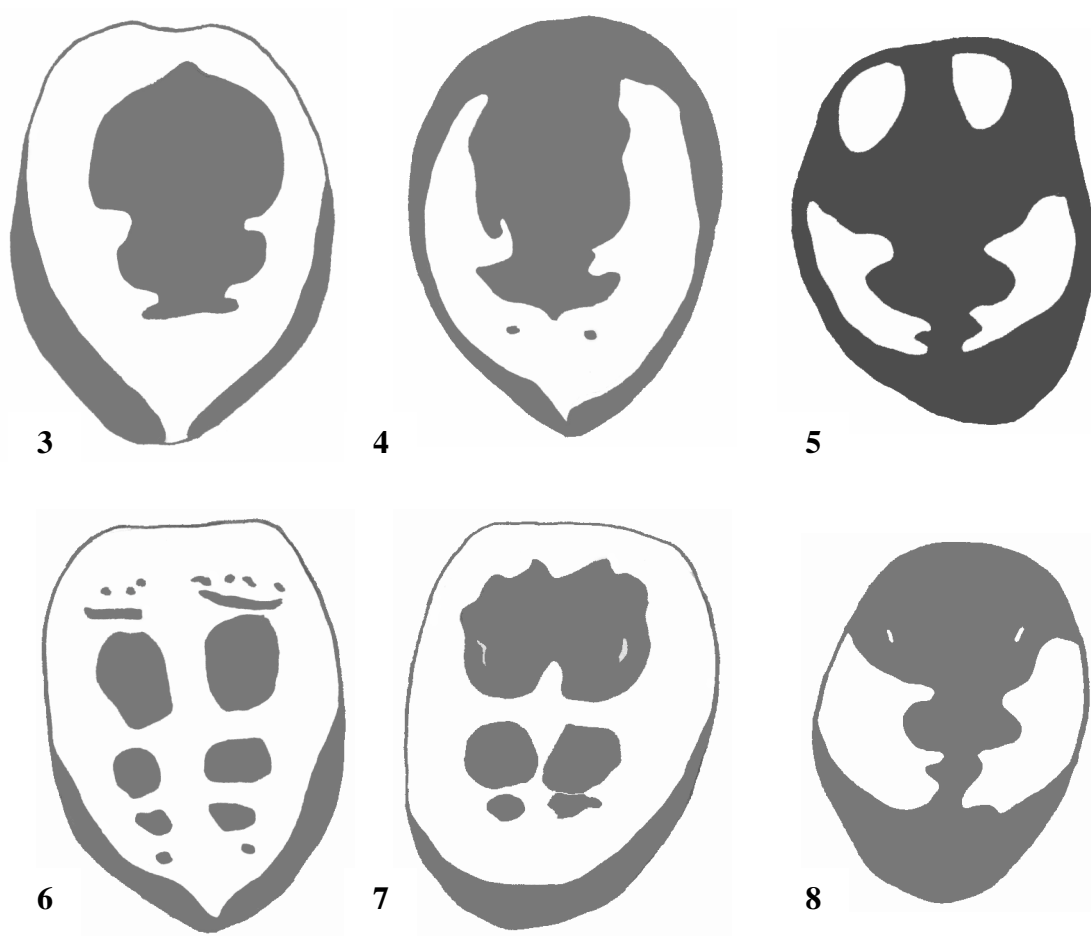
Males

1. Cephalic part covered by black hairs except for two white spots on anterior third and two smaller spots just before PLE. Tibiae I, II without ventral spines. Abdomen dorsally covered by black hairs, except for "African mask" abdominal pattern (Fig. 5). Palp with terminal element of conductor screw-shaped, with two projections seen together from ventral side (Fig. 26). Egypt.....*D. quadrispilatus*
-. Cephalic part covered by white hairs. Tibiae I, II with ventral spines.....2

2. Cephalic part covered by white hairs except a triangle-shaped pattern with its base between the PLE and its apex just behind the MOQ, as well as anterior and lateral edges, covered by brown hairs. Integument yellow. Abdomen dorsally covered by



Figures 1-2. Habitus of two *Dorceus* holotypes. 1. *D. fastuosus* ♂. 2. *D. latifrons* ♀.



Figures 3-8. Abdominal patterns of *Dorceus* males. 3,4. *D. fastuosus* (4. Type of *D. viberti*); 5. *D. quadrispilotus*; 6-7. *D. latifrons*; 8. *D. trianguliceps*.

brown hairs, except two white areas on both sides (Fig. 8). Palp with terminal element of conductor L-shaped retrolaterally (Fig. 28). Tunisia.....*D. trianguliceps*
 -. Cephalic part without triangle-shaped area. Integument crimson red.....3

3. Abdomen with brown median pattern (Figs. 3, 4) in form of a plant leaf (or a spade card) with two continuous lobes. Palp with terminal element of conductor hook-shaped retrolaterally (Figs. 16, 19). Senegal, Tunisia.....*D. fastuosus*
 -. Abdomen with a pattern consisting of spots, six arranged in three pairs, preceded by a few anteriorly and smaller scattered spots, all covered by brown hairs (Figs. 6, 7). Palp with terminal element of conductor divided (Fig. 22). Algeria, Tunisia.....*D. latifrons*

Note: *D. albolunulatus* male is not included in the key. It is only known from original description which is not sufficient.

Females: Only the female of *D. latifrons* is known.

Description of *Dorceus* Species

Dorceus albolunulatus (Simon, 1876)

(Fig. 31)

Eresus albolunulatus Simon, 1876: 86.

Dorceus albolunulatus Simon, 1910: 293.

Note: The original description of this species was based on a female specimen (Simon, 1876). However a modification of the description was published by Simon (1910), and the holotype was then identified as a male *Dorceus* specimen. The description corresponds with that of a male having the typical abdominal pattern found in *Dorceus*. Unfortunately, the tube no.1825 holding the type material from NE Algeria, requested from MNHN was found empty. Therefore, only the description of Simon is available here for comparison with other species.

Description: Male (based on description of Simon (1910): TL 6 mm. Cephalothorax black, bearing grey bristles dorsally and whitish hairs posteriorly; cephalic part low, wider than long, posteriorly slightly inclined; median eyes unequal, arranged in transverse trapezium. Abdomen black, with white transverse strongly curved band anteriorly, and similar band posteriorly but curved in opposite direction; medially with two white indentations disposed between bands. Legs short, femora entirely black, patellae and tibiae tawny, metatarsi and tarsi yellowish red, with scattered white hair.

Distribution: Algeria (Type locality): Biskra 34°51'N 05°44'E, about 220 km from seacoast (altitude 121 m), (Taczanowski) (examined by Simon, 1876, 1910) (Fig. 31).

Dorceus fastuosus C.L.Koch, 1846 (Type species)

(Figs. 1, 3-4, 11, 15-20, 30-31. Table 1)

Dorceus fastuosus C.L.Koch, 1846: 15-16, pl.435, fig.1088; 1850: 70. Simon, 1886: 366; 1892: 254.

Erythrophora fastuosus Simon, 1864: 300.

Dorceus caniceps Simon, 1910: 291. NEW SYNONYMY.

Dorceus viberti Simon, 1910: 292. Lehtinen, 1967: 231 (synonym).

Dorceus canicipiti Simon, 1910: 294. Roewer, 1954: 1291. NEW SYNONYMY.

Material examined: ZMHB: *Dorceus fastuosus*, Holotype ♂, Senegal, Mian, Kat.-Nr. 1527. MNHN: *Dorceus fastuosus* C.L.Koch, tube no.1237 (AR5405) 3 ♂ from Senegal: Dakar; *D. viberti* E.Simon, tube no.9126 (AR5404) 1 ♂, 1 ♀ from Tunisia: Nefzana (Vibert) (may be Nefza ?)[♀ Misidentified]. OMNH: 1 ♂ *Dorceus fastuosus* B.510, Algeria, Lord Walsingham 1903.

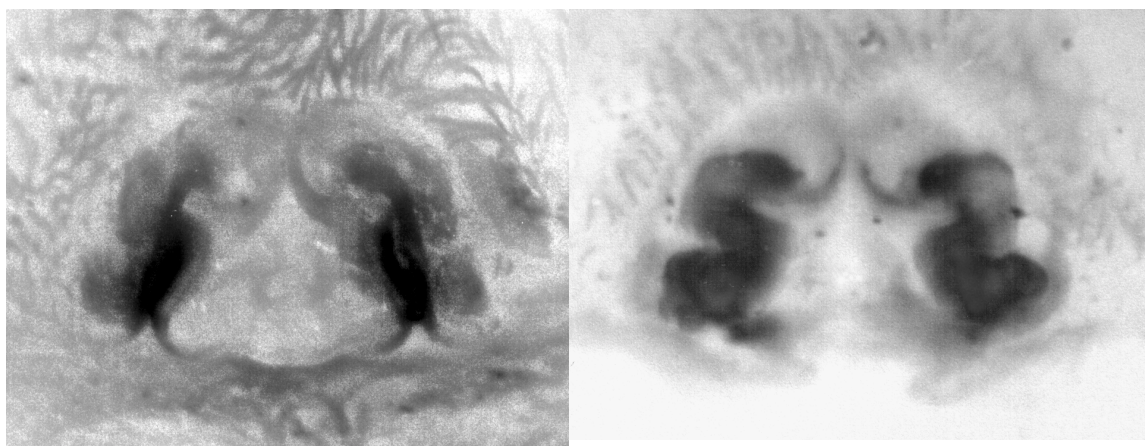
Note: The holotype (Fig. 1) is a dry pinned specimen. Therefore, the measurements of the biggest specimen of 3 ♂ of MNHN were taken. The description is a combination of this specimen and the holotype.

Description: Male (MNHN): TL 7.82. Cephalothorax: L 4.14. Cephalic part: L 2.76, W 3.18. Integument crimson red, covered by short white hairs; posterior and lateral edges very dark, covered by yellowish hairs. Eye measurements: AME 0.14, ALE 0.14, PME 0.17, PLE 0.12, AM-AM 0.12, AL-AL 2.31, PM-PM 0.37, PL-PL 1.94, AM-AL 0.99, AM-PM 0.03. Thoracic part: L 1.38, W 3.07. Colour as in cephalic part. Fovea wide. Chelicerae: crimson red, covered by dense white and yellowish white hairs anteriorly, nearly bare posteriorly in parts adjacent to labium and maxillae; internal side black. Sternum L 2.23; yellowish brown, covered by sparse white to yellowish white hairs. Labium L 0.85, Maxilla L 1.27; reddish brown, covered by sparse white to yellowish white hairs; their tips white. Pedipalps: tibia ventrally covered by long white hairs; other segments covered by pale brown hairs. Palpal organ (Figs. 11, 15-17 *fastuosus*; 18-20 *viberti*): terminal element of conductor is hook-shaped retrolaterally (Figs. 16, 19). Legs: yellowish brown, covered by white and brown hairs. Coxae: yellowish brown, covered sparingly by white to yellowish white hairs. Femora: proximal 1/3-1/2 white, distal 2/3-1/2 brown; Patellae and tarsi white; Tibiae brown; Metatarsi: I, II proximal 2/3 white, distal 1/3 brown, II, IV all white. Tarsi: tip flattened; with a claw tuft. Spination pattern: only ventral on tibiae, metatarsi and tarsi I-IV. Leg I: tibia 0-0-2; metatarsus 0-0-1-4; tarsus 0-1-1-3. Leg II: tibia 0-0-2-0(2); metatarsus 0-1(2)-4-4; tarsus 0-4-4. Leg III: tibia 0-1-2-3; metatarsus 0-4-2-7(6); tarsus 0-3-6. Leg IV: tibia 0-2(0)-3(1)-5(4); metatarsus 0-3-4-3-3-3-7; tarsus 0-1-3-4-7.

Table 1. Leg measurements of *Dorceus fastuosus* male.

Leg	I	II	III	IV
Femur	2.55	2.45	2.04	2.89
Patella	1.53	1.19	1.19	1.50
Tibia	1.60	1.53	1.19	1.90
Metatarsus	1.53	1.39	1.36	1.84
Tarsus	1.19	1.09	0.78	0.99
Total length	8.40	7.65	6.56	9.12

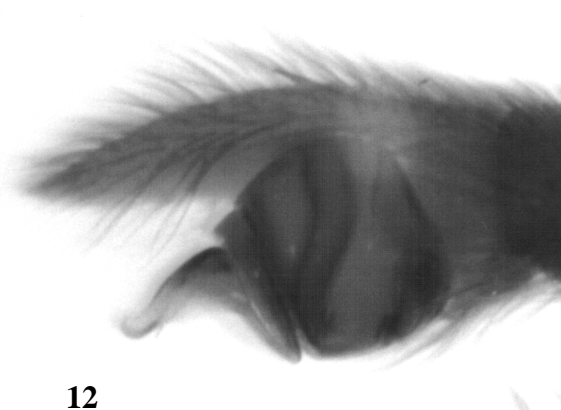
Abdomen: L 4.61; whole dorsal area covered by thick white hairs, medially with brown abdominal pattern (Fig. 3) in form of a plant leaf (or a spade card), with two continuous lobes, posterior lobe smaller with slim base; the pattern covers muscle attachment points; outer border of abdomen covered by brown hairs except vicinity of spinnerets covered by white and yellow hairs; ventrum covered by brown hairs, except for creamy white area above the book-lungs and posterior of genital furrow; cribellum: small, bipartite. [Note. The abdominal pattern variable: circular in the holotype, maybe due to dryness (Fig. 1), and it varies too in the *D. viberti* type (Fig. 4).]



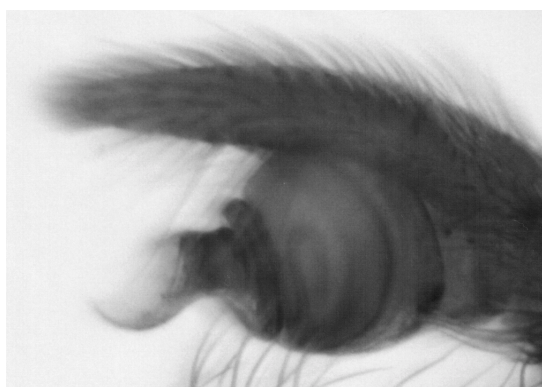
9 **10**
 Figures 9-10. Epigynum (9) and vulvae, dorsal view (10) of *Dorceus latifrons* ♀.
 (A specimen formerly considered *D. eburneus*).



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13



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Figures 11-14. Palpal organs of *Dorceus* males, prolateral view. 11. *D. fastuosus*;
 12. *D. latifrons*; 13. *D. quadrispilotus*; 14. *D. trianguliceps*.

Measurements of the holotype (ZMUB) and the two other male *D. fastuosus* and male *D. viberti* (MNHN) specimens: TL 5.1, 7.14, 6.80, 8.85; cephalic area L 2.21, 1.70, 2.89, 2.81, W 2.47, 2.81, 3.23, 3.29; abdomen L 2.21, 3.40, 3.40, 5.03.

Female: unknown.

Distribution: **Senegal:** Dakar 14°40'N 17°00'W, on Atlantic ocean coast (Simon, 1886, 1910). **Tunisia:** *Dorceus viberti*, Nefzaoua (Vibert) (Simon, 1910), may be Nefza (Djebel Abiod) 37°00'N 09°03'E, about 15 km from seacoast (Fig. 31).

Notes: 1. Simon (1886) described *D. fastuosus* specimens from Senegal. Simon (1910: p.291 note) indicated them to be misidentified and renamed them as *D. caniceps*, which was mentioned in p.294 as *D. canicipiti*. Those three specimens were examined here (MNHN) and synonymized with *D. fastuosus*. No specimens carrying the name *D. caniceps* or *D. canicipiti* were found in the MNHN collection.

2. The male *Dorceus fastuosus* B.510, Algeria, Lord Walsingham 1903 (OMNH) does not belong to genus *Dorceus*. It is an *Eresus* species. The ratio between length and width of cephalic part and width of thoracic part (Fig. 30) elucidates this. It is obvious in this figure that the specimen of Oxford is different from other *Dorceus* males. It was misidentified.

***Dorceus latifrons* Simon, 1873**

(Figs. 2, 6-7, 9-10, 12, 21-23, 30-31. Tables 2-3)

Dorceus latifrons Simon, 1873a: 160-161, pl.3, figs.26-27; 1910: 294.

Eresus eburneus Simon, 1876: 86. NEW SYNONYMY.

Dorceus eburneus Simon, 1885: 20-21; 1892: 249, fig.205; 1910: 292. Lehtinen, 1967: 461, fig.464. NEW SYNONYMY.

Material examined: MNHN: *Dorceus latifrons*, tube no.1826 (AR5400) 1 ♀ from Algeria; *Dorceus eburneus*, tube no.1209 (AR5402) 6 ♂, 1 ♀, 1 s ♀, Tunisia: Beni Saudu ? (Algeria: Bou Saâda). *D. viberti*, tube no.9126 (AR5404) 1 ♀ from Tunisia: Nefzana (Vibert) (may be Nefza ?). MHNG: *Dorceus eburneus* 1 ♂, Tunisie, coll. H. de Saussure.

Note: The holotype (Fig. 2) is a dry pinned specimen. Therefore, the measurements of the female and the biggest male specimens of MNHN were taken. The description is a combination between these specimens and the holotype.

Description: Female (MNHN tube no. 1209 (AR 5402)): TL 12.92. Integument: cephalic part, metatarsi & tarsi I, II, palps and chelicerae reddish brown; anterior edge of cephalothorax dark; thoracic part and legs orange brown; labium, maxillae, sternum and coxae lighter than legs. Cephalothorax: L 5.95. Cephalic part: L 3.57, W 4.50; rectangular. MOQ slightly protruding forwards. Eye measurements: AME 0.13, ALE 0.13, PME 0.18, PLE 0.14, AM-AM 0.21, AL-AL 3.23, PM-PM 0.56, PL-PL 3.18, AM-AL 1.43, AM-PM 0.08. Thoracic part: L 2.38, W 4.25. Fovea small. Chelicerae: with big tooth (cusp) internally; tooth with three black denticles on the side facing the fang. Sternum L 3.34; Labium L 1.17; Maxilla L 1.80, maxillae covered by dense brownish hairs. Pedipalps with stiff bristles, ventrally on tarsus, prolaterally on metatarsus and tarsus (longer setae). Legs without scopula; with long bristles concealing claws. Metatarsus IV with calamistrum, of a single row of short bristles situated about 2/3 on segment retrolaterally. Tarsi: tip thickened, laterally pressed; with weak scopula. Spination pattern: only ventral on tibiae, metatarsi and tarsi III, IV. Leg III: tibia 0-0-2distal; metatarsus 0-2,1-4; tarsus 0-1-4. Leg IV: tibia 0-0-1pro, distal; metatarsus 0-2,3,3-2,5 mostly prolateral; tarsus 0-1,3,3-1,4 (left metatarsus 321225; tarsus 0-214).

Table 2. Leg measurements of *Dorceus latifrons* female.

Leg	I	II	III	IV
Femur	3.31	3.06	2.46	3.48
Patella	1.70	1.78	1.19	2.04
Tibia	1.78	1.61	1.19	2.29
Metatarsus	2.04	1.70	1.19	2.04
Tarsus	1.36	1.19	0.59	0.93
Total length	10.19	9.34	6.62	10.78

Abdomen: L 8.26; creamy white (above and below); covered by short dense creamy white hairs. Abdominal pattern absent. Cribellum: small bipartite (larger than in male).

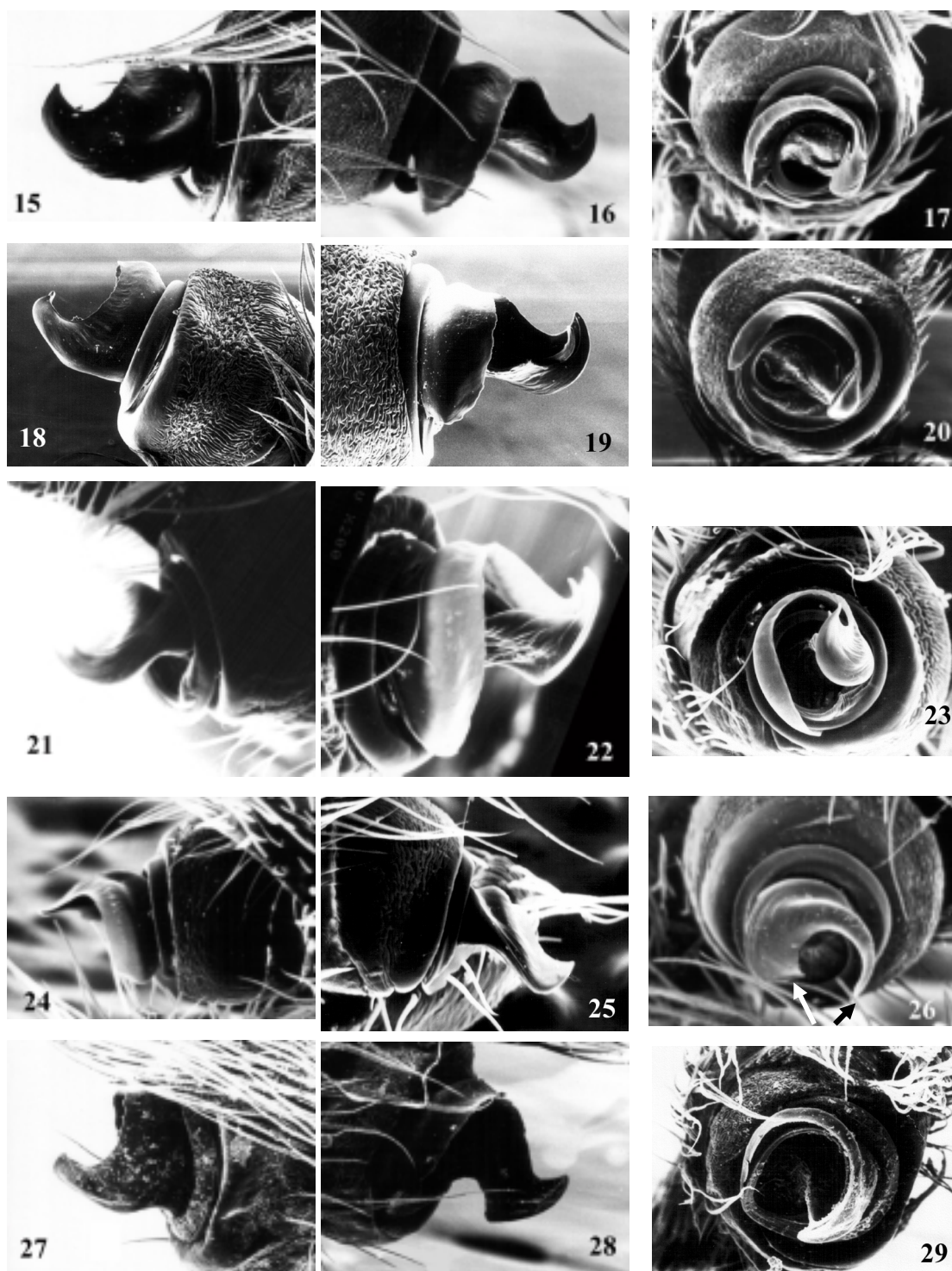
Genitalia: Among the three female specimens examined, the holotype *D. latifrons*, a dry pinned specimen was impossible to examine. The epigynum was removed and cleared. It was compared with that of the two other females which were formerly considered *D. eburneus* and *D. viberti* and found to be identical (Figs. 9-10). Hence, *D. eburneus* is here regarded as a junior synonym with *D. latifrons*. The female *D. viberti* (MNHN, tube no.9126 (AR5404)) is here identified as *D. latifrons*. It may be misplaced in the vial of the male *D. viberti* but does not belong to its species.

Measurements of the female holotype *D. latifrons*, female *D. viberti* and subadult female *D. eburneus* (MNHN): TL 11.56, 12.24, 10.2; cephalic area L 4.5, 3.74, 3.57, W 5.95, 4.42, 4.34; abdomen L 6.8, 8.24, 6.63.

Male (MNHN tube no. 1209 (AR 5402)): TL 14.06. Cephalothorax: L 5.41; integument crimson red; covered by white hairs mixed with pale brown hairs. Cephalic part: L 3.71, W 4.77. MOQ slightly protruding forwards. Clypeus: with a protrusion between chelicerae. Eye measurements: AME 0.14, ALE 0.12, PME 0.19, PLE 0.17, AM-AM 0.20, AL-AL 3.92, PM-PM 0.58, PL-PL 3.39, AM-AL 1.64, AM-PM 0.07. Thoracic part: L 1.70, W 3.99. Fovea circular. Chelicerae: crimson red, covered by long brown hairs anteriorly. Sternum L 6.93; Labium L 1.06; Maxilla L 1.80; sternum, coxae and pedipalps orange to brown; maxillae and labium strawberry red; all covered by pale brown hairs. Pedipalps: covered by long brown hairs. Palpal organ (Figs. 12, 21-23): with conductor terminally divided (Fig. 22). Legs: orange to brown, covered by pale brown hairs except: distal border of femur, distal half of patella, distal third of tibia and metatarsus, proximal third of tarsus covered by white hairs (less distinct on legs III, IV); both sides of metatarsus I covered by white hairs. Spination pattern: only ventral on tibiae, metatarsi and tarsi I-IV (numerous). Leg I: tibia 0-0-6distal; metatarsus 2-1,1,1-5; tarsus 2-2-1,2. Leg II: tibia 2,2,3-2-7; metatarsus 5-3-4-4-4-6; tarsus 5-4-6. Leg III: tibia 3-2-2-7distal; metatarsus 4-6-4-10; tarsus 3-4-3-4-5. Leg IV: tibia 3-3-3-4-3-11; metatarsus 50+6 distal; tarsus 3,4-4-4-6.

Table 3. Leg measurements of *Dorceus latifrons* male.

Leg	I	II	III	IV
Femur	3.97	3.71	3.44	4.03
Patella	1.96	1.70	1.43	2.01
Tibia	2.28	1.96	1.59	2.65
Metatarsus	2.38	2.01	1.70	2.65
Tarsus	1.48	1.27	0.95	1.22
Total length	12.07	10.65	9.11	12.56



Prolateral

Retrolateral

Ventral

Figures 15-29. SEM of palpal organs of *Dorceus* males, prolateral, retrolateral and ventral views. 15-20. *D. fastuosus* (18-20. Type of *D. viberti*); 21-23. *D. latifrons*; 24-26. *D. quadrispilatus*; 27-29. *D. trianguliceps*.

Abdomen: L 9.25; creamy white, covered by dense white hairs except outer border and abdominal pattern, which consists of six spots in three pairs, preceded by few spots near anterior edge of abdomen, and sparse smaller spots scattered in area of abdominal pattern, all covered by brown hairs (Figs. 6-7). Ventrally with dark greyish brown furrows behind genital furrow and on both sides; covered by pale brown hairs until spinnerets. Cribellum small. [MHNG specimen is faded, without abdominal pattern.]

Measurements of the other males (MNHN and MHNG): TL 8.5, 8.93, 8.5, 8.16, 6.8, 7.65; cephalic area L 3.32, 2.98, 2.64, 2.27, 2.21, 2.46, W 4.17, 3.66, 3.83, 3.57, 2.72, 3.18; abdomen L 5.10, 5.1, 4.76, 5.27, 4.25, 4.59.

Distribution: Female holotype: **Algeria:** Sahara, desert south of Algeria (without definite locality) (Simon, 1873a, 1910). *D. eburneus*: **Algeria:** Bou Saâda 35°12'N 04°11'E, about 190 km from seacoast (altitude 560 m)(Dr Ch.Leprieur), Hodna (Plaine du Hodna) 35°21'N 04°30'E, 160-180 km from seacoast, Biskra 34°51'N 05°44'E, about 220 km from seacoast (altitude 121 m) (Simon, 1876, 1885, 1910); **Tunisia:** Sfax 34°49'N 10°45'E, on seacoast; Gabès 33°53'N 10°04'E, on seacoast (V.May); Qasserine (Kasserine) 35°11'N 08°52'E, about 150 km from seacoast, Feriana 34°58'N 08°36'E, about 160 km from seacoast; Sbeitla (? may be Sbeitla) 35°14'N 09°05'E, more than 130 km from seacoast (Simon, 1885, 1910) (Fig. 31).

Dorceus quadrispilotus Simon, 1908

(Figs. 5, 13, 24-26, 30-31. Table 4)

Dorceus quadrispilotus Simon, 1908: 82-83. El-Hennawy, 1998: 97-100, figs. 1-5.

Dorceus quadrispilota Simon, 1910: 293-294.

Material examined: MNHN: *Dorceus quadrispilotus*, tube no.8348 (AR5406) 3 ♂ from Egypt: Alexandria (Letourneux): Holotype and 2 paratypes. CHE: H.K.El-Hennawy collection, Cairo, Egypt. 1 ♂ 11 May 1990, about 6 km west of El-Hammam (about 40 km west of Lake Mariout, west of Alexandria, the type locality) about 30°49'N 29°17'E.

Description: Male (CHE): TL 6.11. Cephalothorax: L 3.24. Cephalic part: L 2.12, W 2.40. Integument crimson red, covered by short black hairs. There are four spots of white hairs. Two of them are in the anterior third of the cephalic part. The other two spots are smaller (about one-quarter of the anteriors) present just before PLE. Behind the area of the median eyes, there is a small bare area. Eye measurements: AME 0.11, ALE 0.09, PME 0.13, PLE 0.10, AM-AM 0.12, AL-AL 1.67, PM-PM 0.32, PL-PL 1.52, AM-AL 0.72, AM-PM 0.02. Thoracic part: L 1.12, W 2.25; posterior edge notched forwards. Lighter in colour than cephalic part, with sparse black hairs on both sides, mixed with white hairs near edges, which increase on both sides posteriorly. Fovea small. The area behind fovea is bare except of a few white hairs. Chelicerae: crimson red, covered by black hairs, longer anteriorly, and nearly bare in parts adjacent to labium and maxillae. Sternum L 1.87; anteriorly wide, posteriorly attenuated between coxae IV, with minute extensions among other coxae; reddish brown, covered by sparse black hairs. Labium L 0.67; Maxilla L 1.00; like sternum in colour. Pedipalps: crimson red, covered by black hairs, except the patella which is covered by white hairs. Palpal organ (Figs. 13, 24-26): terminal element of conductor is screw-shaped with two projections visible together ventrally (Fig. 26), and only one of them appears alone retrolaterally while the other appears prolaterally. Legs: crimson red, covered by black and white hairs. Coxae: lighter in colour, with sparse

white hairs at borders of trochanters. Leg I: femur black with white hairs near patella; patella 1/4 white, 3/4 black; tibia 2/3 black, 1/3 white; metatarsus 1/3 white, 2/3 black; tarsus 1/2 white, 1/2 black. Leg II: like leg I except: patella 3/4 white, 1/4 black; tibia 1/2 black, 1/2 white. Leg III: white except lateral sides of femur and tip of tarsus black. Leg IV: femur black with white hairs near patella; patella white; tibia 1/3 white, 2/3 white with black lateral sides; metatarsus and tarsus like leg III. Tarsi: tip thickened, laterally pressed; with weak scopula. Spination pattern: only on tibiae III & IV, metatarsi and tarsi I-IV. Legs I & II: metatarsus I v 0-0-2 p 0-0-1, II v 0-2-2 p 0-1-1-1 r 0-0-1; tarsus with a few ventral spines. Legs III & IV: tibia III v 0-0-2, IV v 0-0-2-3; metatarsi and tarsi with numerous ventral spines and rarely prolateral and retrolateral spines at distal end.

Table 4. Leg measurements of *Dorceus quadrispilotus* male.

Leg	I	II	III	IV
Femur	2.62	2.25	1.82	2.50
Patella	1.22	1.20	1.00	1.22
Tibia	1.45	1.25	1.00	1.85
Metatarsus	1.67	1.50	1.20	1.75
Tarsus	1.12	0.97	0.65	0.87
Total length	8.08	7.17	5.67	8.19

Abdomen: L 2.87; entirely covered by black hairs dorsally, except two white oblong spots anteriorly, separated by an area equal to size of spot. Posteromedially semi-circular procurved wide band which thickened at both ends forming two triangles, with tops facing each other. This band and triangles covered by white hairs. Also, there is a small spot of white hairs above spinnerets at the end of the abdomen. These white areas on black background form the picture of an "African mask" with two eyes, a mouth, and a white chin (El-Hennawy, 1998: Fig. 1). Ventrally covered by black hairs, except the bipartite cribellum and the large creamy white area above the book lungs. Spinnerets: anterior pair big and others comparatively very small.

Measurements of MNHN specimens: TL 6.12, 6.29, 8.50; cephalic area L 2.13, 2.30, 2.72, W 2.55, 2.64, 3.15; abdomen L 3.23, 3.49, 4.42.

Female: unknown.

Distribution: Egypt: Alexandria: Mariout (Letourneux) (Simon, 1908, 1910); near El-Hammam, west of Alexandria (El-Hennawy, 1998) (Fig. 31).

Habitat: Semi-arid region very near to the Mediterranean seacoast. Climate, in May, very humid in the early morning; cold before sunrise and moderately hot at noon; mean temperature 17.5-21.0°C; Rainfall 0.4-0.8 mm; evaporation 5.0-7.5 mm/day; and relative humidity 67.0-73.5% (Ali 1982). Ground of semi-stabilized sand, covered by low vegetation, mostly of annual herbs.

Dorceus trianguliceps Simon, 1910
(Figs. 8, 14, 27-29, 30-31. Table 5)

Dorceus trianguliceps Simon, 1910: 292-293.

Material examined: MNHN: *Dorceus trianguliceps*, tube no.23757 (AR5401) 1 ♂ from SE Tunisia "entre Gabès F.Tatahouine et la fr. Tripolitaine".

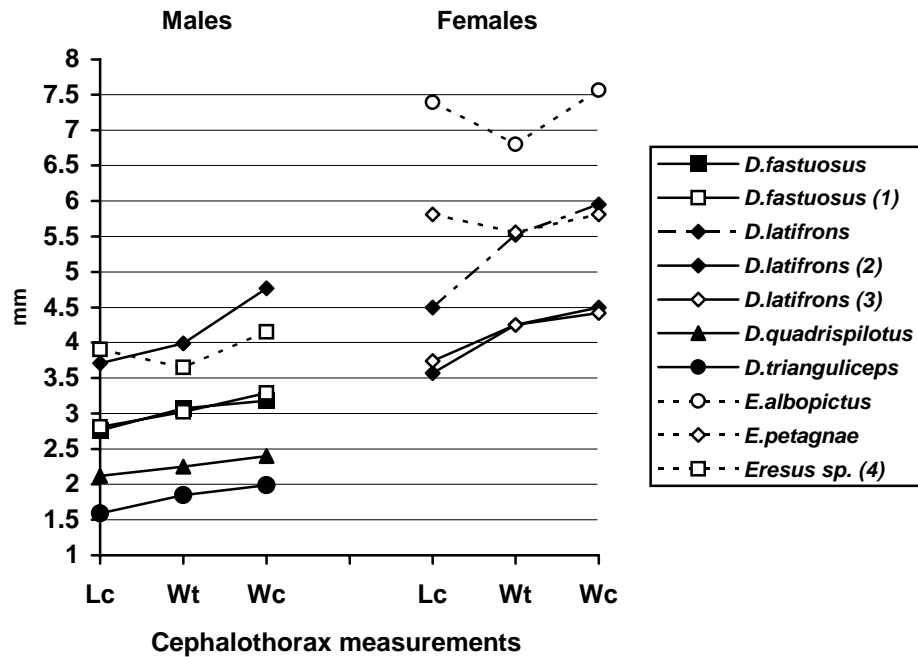


Figure 30. Comparison of cephalothorax measurements of *Dorceus* males and females, in addition to *Eresus* species. Lc, Wc = length and width of cephalic part, Wt = width of thoracic part. 1 = Type of *D. viberti*, 2 = formerly considered *D. eburneus*, 3 = formerly misidentified as *D. viberti*, 4 = formerly identified as *D. fastuosus*, OMNH.

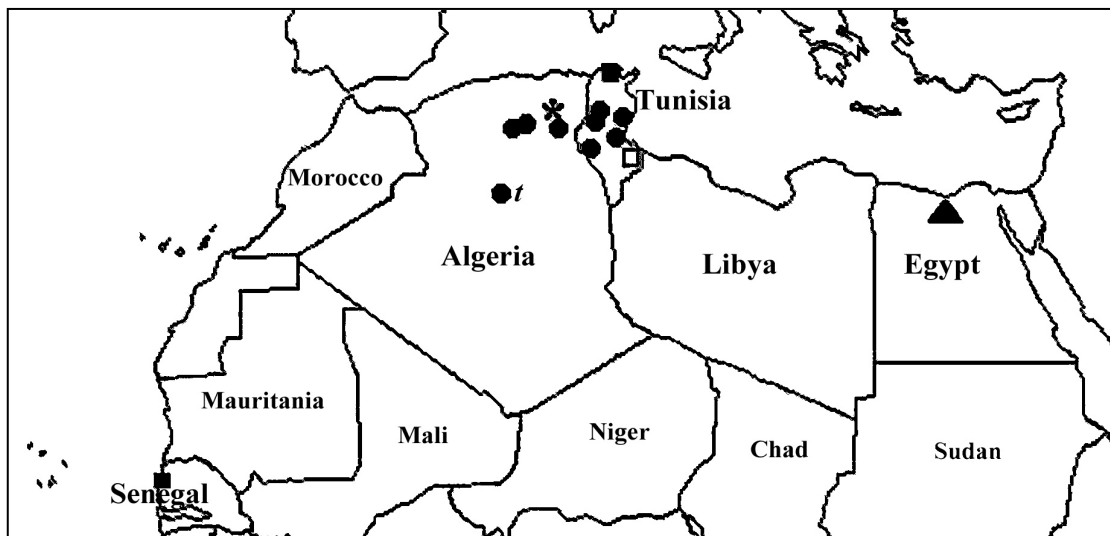


Figure 31. Map showing distribution of *Dorceus* species in North Africa and Senegal. *D. albolunulatus* (asterisk), *D. fastuosus* (black square), *D. latifrons* (black circle) [*t* = type locality], *D. quadrispilatus* (black triangle), *D. trianguliceps* (white square).

Description: Male (Holotype): TL 5. Cephalothorax: L 2.12. Integument : yellow. Cephalic part: L 1.59, W 1.99; with triangle-shaped area, its base between PLE and its apex just behind MOQ; as well as anterior and lateral edges, covered by brown hairs; remaining area, including the MOQ and two converted triangles among the MOQ, ALE, and PLE covered by creamy white hairs. Eye measurements: AME 0.07, ALE 0.07,

PME 0.10, PLE 0.07, AM-AM 0.10, AL-AL 1.46, PM-PM 0.28, PL-PL 1.39, AM-AL 0.61, AM-PM 0.05. Thoracic part: L 0.53, W 1.85; covered by creamy white hairs. Fovea small. Chelicerae: covered by dense brown hairs anteriorly. Sternum L 1.46; posteriorly attenuated between coxae IV, with minute extensions among other coxae. Labium L 0.48, Maxilla L 0.68; covered by sparse brown hairs (darker than coxae). Pedipalps: covered by long brown hairs. Palpal organ (Figs. 14, 27-29): terminal element of conductor L-shaped retrolaterally (Fig. 28). Legs: femora, tibiae (except the distal third), metatarsi and tarsi (except the apical part) covered by brown hairs; excepted areas covered by creamy white hairs. Tarsi: tip thickened, laterally pressed; with weak scopula. Spination pattern: only ventral on tibiae, metatarsi and tarsi I-IV. Leg I: tibia 0-0-2. Leg II: tibia 0-0-2; metatarsus 0-0-2. Leg III: tibia 0-0-2; metatarsus 0-1-4; tarsus 0-0(2)-4. Leg IV: tibia 0-0-1,2; metatarsus 1,1-2,2-1,5; tarsus 0-1-5.

Table 5. Leg measurements of *Dorceus trianguliceps* male.

Leg	I	II	III	IV
Femur	1.63	1.46	1.36	1.70
Patella	1.02	0.85	0.68	0.95
Tibia	1.02	0.92	0.68	1.19
Metatarsus	1.36	1.02	0.68	1.05
Tarsus	0.75	0.85	0.41	0.78
Total length	5.78	5.10	3.81	5.67

Abdomen: L 3.34; covered dorsally by brown hairs, except two areas on both sides of the median third of it which are covered by white hairs; the two areas are semicircular-shaped, near to each other posteriorly, but not connected; each of them has two internal protrusions (Fig. 8), and something similar to the abdominal pattern of *D. quadrispilotus*; with an indefinite whitish area in front of the spinnerets; ventral side covered by brown hairs.

Female: unknown.

Distribution: Tunisia: region between Gabès 33°53'N 10°04'E, on seacoast, Fom Tatahouine 32°58'N 10°26'E, about 83 km from seacoast, and the Libyan boundaries (Vibert) (Simon, 1910) (Fig. 31).

Other Species

Eresus albopictus Simon, 1873

Eresus albopictus Simon, 1873b: 352-353, pl.10, fig.12; 1910: 295-296.

Eresus lucasi Simon, 1873b: 353-355, pl.10, figs.8,9; 1892: 251. (synonymized by Roewer, 1954)

Dorceus albopictus Lehtinen, 1967: 231 (transferred from *Eresus*).

Material examined: MNHN: 2 tubes, from Morocco: 2♀ from: Agadir 30°27'N 09°36'W on Atlantic ocean coast (L.Berland, IV-1939) (AR5387); 2♀ (dry) from: Goulimine 29°00'N 10°05'W about 35 km from Atlantic ocean coast (L.Berland, V-1939) (AR5388). [No material of *Eresus lucasi*]

The genitalia of this species were examined and compared with the three female specimens of *Dorceus latifrons* to find that they are completely different. This species does not belong to genus *Dorceus*. The ratio between length and width of cephalic part and width of thoracic part (Fig. 30) elucidates this. It is obvious in this figure that *E. albopictus* is different from *Dorceus* females and similar to *Eresus* specimens (Two females of *E. petagnae* (Audouin, 1825) from Alexandria, Egypt, B.507 t.9 OMNH,

were compared with.). It was transferred to genus *Dorceus* by Lehtinen (1967). It has to be restored to genus *Eresus* again.

Distribution: **Algeria:** El-Asnam (Orléansville) 36°04'N 01°19'E, about 42 km from seacoast, Daya? (L.Bedel); Wahran (Oran) 35°42'N 00°38'W, on seacoast; Maghnia (Marnia) 34°51'N 01°43'W, about 34 km from seacoast; near Oran [2 ♂, 1 ♀], 1 ♂ from small locality called Lalla-Maghnia (M. H.Lucas 1850). **Morocco:** Essaouira (Mogador) 31°40'N 09°45'W, on Atlantic ocean coast (de la Escalera), Melilla 35°13'N 02°57'W, on seacoast (Arias). **Italy:** Sicily: near Palermo 38°08'N 13°25'E, on seacoast (M.le professeur Waga) [That record was doubted by Simon (1910) although he accepted it before (1873b), but it may be true because Sicily is very near to the African Mediterranean coast. Therefore, it maybe possible to find this species there.]

Seothyra griffinae Dippenaar-Schoeman, 1990

The "rather deviating undescribed species from Central Africa" mentioned by Lehtinen (1967) from the Museum of Geneva has been examined. It is not a *Dorceus* species but a *Seothyra*, its sister genus. It could be identified as *Seothyra griffinae* according to the revision of this genus by Dippenaar-Schoeman (1990) who firstly described a male of this species from north Namibia. The locality of the Geneva specimen is Cului, in south of Angola, near the type locality.

Natural History

In 1967, Lehtinen stated that: "Nothing is known about the habits of *Dorceus*", except that it was expected to be "terricole" or subterranean (Simon, 1892; Lehtinen 1967) due to the morphological resemblance between it and *Seothyra*. Unfortunately, the nests of *Dorceus* species have not been discovered in nature, in contrast to *Seothyra* which has well-described subterranean nests (Dippenaar-Schoeman, 1990).

The male specimen of *D. quadrispilotus*, which was described by El-Hennawy (1998), was found at noon, running on the hot ground in a way similar to ant's movement. This behaviour resembles that of *Seothyra* (Dippenaar-Schoeman, 1990). That specimen was kept alive for a few days in a transparent plastic bottle filled partly with sand. After the first night, it hid under a tent of sand and silk threads, shaped like a dome with a few parallel threads spread from it for a few millimetres on the surface of sand. When the tent was turned over, the spider was found hanging upside down inside. There was no burrow like that of *Seothyra*. But it may construct a burrow in nature ?

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